REMARKS

INTRODUCTION:

In accordance with the foregoing, new claims 18 and 19 have been added. No new matter is being presented, and approval and entry are respectfully requested.

Claims 1, 2, 7-9, 11, 12, and 15-19 are pending and under consideration. Claims 3-6,13 and 14 have been withdrawn from consideration. Reconsideration is respectfully requested.

CHANGES TO THE SPECIFICATION:

The specification has been amended to include, before the first line the sentence: -- This application is based on and hereby claims priority under 35 U.S.C. §371 to PCT Application No. PCT/JP2003/09184 filed on July 13, 2003 and Japanese Application No. 2002-212571 filed on July 22, 2002, the contents of which are hereby incorporated by reference. -- to indicate the priority claimed therein.

This change has been made to the specification only to place it in preferred and better U.S. form for issuance and to resolve the Examiner's objections raised in the Office Action. Because the information concerning the benefit claim was included in the Declaration and recognized by the Patent Office by inclusion on the first filing receipt, a petition under 37 CFR § 1.78(a) and surcharge are not required. See MPEP § 201.11.

REJECTION UNDER 35 U.S.C. §103:

In the Office Action, at pages 4-5, claims 1, 2, 7-9, 11, 12 and 15-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP06-234911 in view of JP11-080535 or EP1148097 optionally in further view of the Concise Encyclopedia of Polymer Science of Polymer Science and Engineering. The reasons for the rejection are set forth in the Office Action and therefore not repeated. The rejection is traversed and reconsideration is requested.

It is respectfully submitted that JP06-234911 teaches a resin comprising:

A , a polyphenylene resin of 15-50 weight sections;

B, an alkenyl aromatic compound of 60 weight sections;

C, a combination of C1 and C2 if 10 to 20 weight sections:

C-1, an A-B-A mold block copolymer (wherein the polymerization block of A is an alkenyl aromatic compound), B being a resin that is a polymerization block or its hydrogenation object of a diene system hydrocarbon compound, and the content of A exceeds 50% of the weight; and

C-2, an A-B-A mold block copolymer (wherein the polymerization block of A is an alkenyl aromatic compound), B is a polymerization clock or its hydrogenation object of a diene system hydrogen compound, and the content of A is 50 of less % of the weight of the resin in the total 10-20 weight sections; and

D, a resin constituent which consists of the ethylene system polymer-aromatic series vinyl graph polymer 1-20 weight sections with high graft efficiency.

In contrast, independent claim 1 of the present invention recites a resin composition comprising:

A, which represents 70 to 98% by weight of a polyphenylene ether resin or a mixture of a polyphenylene ether resin and a polystyrene-based resin;

B, which represents 1 to 15% by weight of a hydrogenated product of an aromatic vinyl-conjugate diene block copolymer having an aromatic vinyl content of 50 to 80% by weight; and

C, which represents 1 to 15% by weight of a hydrogenated product of an aromatic vinyl-isoprene block copolymer having an aromatic vinyl content of 15 to 45% by weight, wherein isoprene blocks in the aromatic vinyl-isoprene block copolymer (C) have a total amount of 1,2- and 3,4-vinyl bonds of 35% or more.

Hence, it is clear that the chemical compositions of JP06-234911 and the present invention are different. It is known that organic compounds are compounds in which elements mainly attached to carbon structures combine, and due to various combinations, a large number of compounds having various characteristics are formed. Even if two compounds differ only by one carbon, the characteristics may be very different. As for isomers, even though the molecular formula is the same, the characteristics of the isomers may be different.

The Examiner comments that he is unaware of the amount of vinyl bonds in SEPS4055. SEPS4055, which is recited in JP06-234911, is one of a series of high performance thermoplastic rubbers, wherein polystyrene blocks act as a crosslinking point at the temperature below the glass transition temperature(Tg) of polystyrene (see Molecular Structure Model below), and is developed by KURARAY CO., LTD., as is stated at http://www.septon.info/en/index.html, recited below for the convenience of the Examiner:

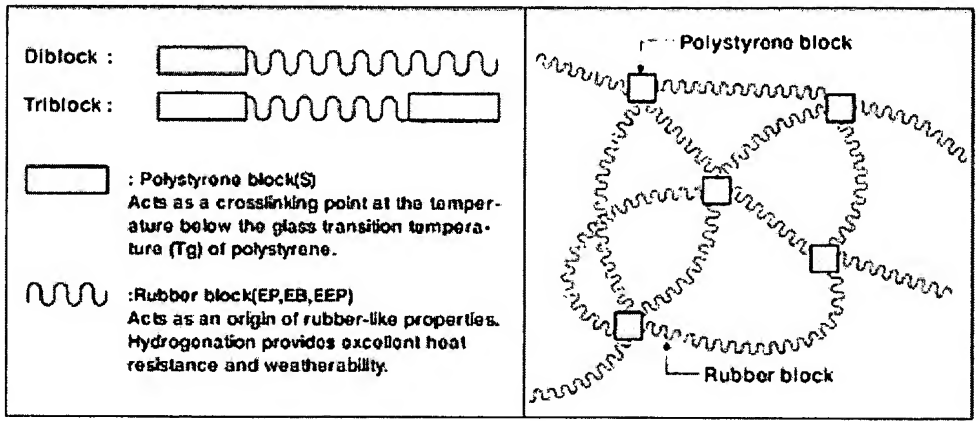
SEPTON™ is a series of high performance thermoplastic rubbers developed by KURARAY CO., LTD. using its unique isoprene technology.
In terms of structure, SEPTON™ is a series of hydrogenated styrenic block copolymers, and it exhibits rubber-like

properties over a wide range of temperatures. Its remarkable characteristics are as follows:

- Excellent Mechanical Properties
- Superior Heat Resistance
- Good Weatherability
- Excellent Chemical Resistance
- Excellent Low Temperature Properties
- Low Toxity
- Excellent Electrical Insulation Properties

Prior to processing, the polystyrene end blocks are associated in rigid domains. In the presence of heat and shear such as during processing, the polystyrene domains soften and permits flow. After cooling, the polystyrene domains reform and harden, locking the rubber network in place. This physical phenomenon provides SEPTON™ with its high tensile strength and its elasticity. Since SEPTON™ is a thermoplastic, it is recyclable.

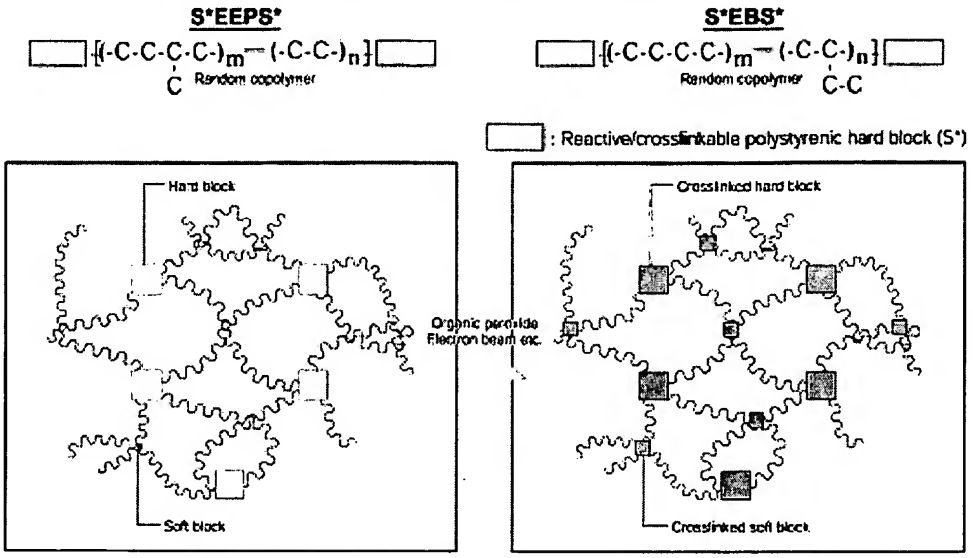
Molecular Structure Model



Further, as stated at http://www.septon.info/en/v-series/index.html and recited below for the convenience of the Examiner, as shown below, the SEPTON high performance thermoplastic rubbers exhibit a Tg of -50°C:

SEPTON™ V-series is high performance thermoplastic rubber developed by KURARAY CO., LTD. using its unique polymerization technology.
SEPTON™ V-series is block copolymer having reactive/crosslinkable hard block and soft block.
Crosslinked SEPTON™ V-series exhibits excellent heat resistance and oil resistance while keeping its good rubber-like properties and good low temperature properties, caused by crosslinked hard block.

Molecular Structure Model and Crosslinked Structure Model



Features of SEPTON™ V-series

1. Thermoplastic rubber
2. Reactive/crosslinkable hard block
3. Good crosslinkability by organic peroxide, electron beam
4. Good miscibility with polyolefins and styrenic resins
5. Low specific gravity
6. Excellent electrical insulation
7. Good low temperature properties (Soft block's Tg: ca. -50deg.C) (emphasis added)

Hence, it is respectfully submitted that the SEPS4055 of JP06234911 has a Tg which is not high, and thus, the vinyl content thereof is not high. Thus, the Examiner's conclusion that high amounts of vinyl content in hydrogenated styrene/diene block polymers are favorable in PPE compositions does not apply to the use of SEPS4055, and JP06-234911 does not teach the use of a high vinyl content.

JP11-080535, as stated in the Abstract, teaches a resin composition that contains:

> A, a polyphenylene ether resin such as poly(2,6-dimethyl-1,4-phenylene) ether; and B, a component of 1-50 wt.% (based on the total composition) of a conjugated dienealkenylaromatic compound copolymer (e.g. styrene-isoprene copolymer) containing ≥50% of the conjugated diene compound in a form polymerized through 1, 2 or 3,4-bond and having a tanδ peak temperature of ≥-15°C determined by viscoelasticity measurement, wherein the component B preferably contains 5-60 wt.% of the alkenylaromatic component, and the polyamide content of the composition is preferably <20 pts.wt. based on 100 pts. wt. of the component A.

As noted in paragraph [0011] of JP11-080535, 50% or more of a conjugated diene compound carries out the polymerization of component B of JP11-080535 by 1, 2, or 3, and 4 association, and it is a conjugated diene-alkenyl aromatic compound copolymer whose peak temperature of tandelta

is -15 degrees C or more.

It is respectfully submitted that JP 11080535 merely discloses that the vinyl content of the styrene-based elastomer to be blended with a PPE-based resin is preferably high in order to obtain an improved damping property. However, JP 11080535 does not teach or suggest the specific composition of the present invention, i.e., a resin composition comprising (A) 70 to 98% by weight of a polyphenylene ether resin or a mixture of a polyphenylene ether resin and a polystyrene-based resin, (B) 1 to 15% by weight of a hydrogenated product of an aromatic vinyl-conjugate diene block copolymer having an aromatic vinyl content of 50 to 80% by weight, and (C) 1 to 15% by weight of a hydrogenated product of an aromatic vinyl-isoprene block copolymer having an aromatic vinyl content of 15 to 45% by weight, wherein isoprene blocks in the aromatic vinyl-isoprene block copolymer (C) have a total amount of 1,2- and 3,4-vinyl bonds of 35% or more, as is recited in claim 1 of the present invention.

EP1148097 teaches a resin composition comprising:

A, a polyphenylene ether-based resin; and
B, a polyolefin resin, wherein the weight ratio (A)/(B) of the polyphenylene ether-based resin and the polyolefin resin is in the range of 95/5-5/95; and
C, a hydrogenated block A containing over 50 wt% of a vinyl aromatic compound component and block B containing over 50 wt% of a conjugated diene compound component, the 1,2 and 3,4 vinyl content of the conjugated diene compound component of the copolymer being 60-90%, the content of the bonding vinyl aromatic compound component being 30-70wt% and at least 85% of the double bonds of the conjugated diene compound being hydrogenated; and the hydrogenated block copolymer is present in the range of 1-50 parts by weight to 100 parts by weight of the total of the polyphenylene ether-based resin A and the polyolefin resin B.

It is respectfully submitted that EP 1148097 discloses that, from the aspect of impact resistance, it is preferable for the elastomer in the polyolefin-based resin composition to have a high vinyl content. However, EP 1148097 does not teach or suggest a resin composition comprising (A) 70 to 98% by weight of a polyphenylene ether resin or a mixture of a polyphenylene ether resin and a polystyrene-based resin, (B) 1 to 15% by weight of a hydrogenated product of an aromatic vinyl-conjugate diene block copolymer having an aromatic vinyl content of 50 to 80% by weight, and (C) 1 to 15% by weight of a hydrogenated product of an aromatic vinyl-isoprene block copolymer having an aromatic vinyl content of 15 to 45% by weight, wherein isoprene blocks in the aromatic vinyl-isoprene block copolymer (C) have a total amount of 1,2- and 3,4-vinyl bonds of 35% or more, as is recited in claim 1 of the present invention.

The Concise Encyclopedia of Polymer Science and Engineering describes properties of PPE, but does not teach or suggest a resin composition comprising (A) 70 to 98% by weight of a

polyphenylene ether resin or a mixture of a polyphenylene ether resin and a polystyrene-based resin, (B) 1 to 15% by weight of a hydrogenated product of an aromatic vinyl-conjugate diene block copolymer having an aromatic vinyl content of 50 to 80% by weight, and (C) 1 to 15% by weight of a hydrogenated product of an aromatic vinyl-isoprene block copolymer having an aromatic vinyl content of 15 to 45% by weight, wherein isoprene blocks in the aromatic vinyl-isoprene block copolymer (C) have a total amount of 1,2- and 3,4-vinyl bonds of 35% or more, as is recited in claim 1 of the present invention.

The formulation of the resin composition set forth in claim 1 of the present invention utilizes a combination of components (A), (B) and (C), which exhibit special characteristics. As noted in lines 13-15 of page 14 of the specification: "The resin composition of the invention is excellent in chemical resistance, heat resistance, rigidity and impact resistance."

These properties are brought about by the specific combinations of components recited in claim 1. That is, the PPE resin (A) is blended with component (C) (that is, a hydrogenated product of an aromatic vinyl-isoprene block copolymer having a low vinyl content) which is capable of improving the chemical resistance, and with component (B) (i.e., a hydrogenated product of an aromatic vinyl-conjugated diene block copolymer having a high vinyl content) and the compatibility between the components is enhanced. As noted in lines 7-14 of page 11 of the specification, the surface appearance of the molded article is enhanced: "The use of the block copolymer high in the aromatic vinyl content can enhance the compatibility of component (C) that improves chemical resistance with component (A), and inhibit layer separation which occurs in a thin-walled molded article (2 mm or less, particularly 0.5 mm or less), thereby being able to improve remarkably the surface appearance of the molded article." It should be noted that the effects of the invention cannot be attained in the case where component (A) is blended with either one of the components (B) or (C) only. In addition, the effects of the invention cannot be obtair when either one of the components (B) or (C) is not in the claimed scope.

Clearly, the chemical composition of independent claim 1 (see above) is different from the chemical composition of JP06-234911, JP11-080535 and EP1148097. Hence, it is respectfully submitted each of JP06-234911, JP11-080535 and EP1148097 teaches away from the present invention.

Also, even if JP11-080535, JP06-234911, EP1148097 and the Concise Encyclopedia of Polymer Science and Engineering are combined, independent claim 1 of the present invention is not taught or suggested.

Thus, independent claim 1 of the present invention is submitted to be patentable under 35 U.S.C. §103(a) over JP06-234911 in view of JP11-080535 or EP1148097 optionally in further view of the Concise Encyclopedia of Polymer Science of Polymer Science and Engineering. Since claims

2, 7-9, 11, 12 and 15-17 depend from independent claim 1 of the present invention, claims 2, 7-9, 11, 12 and 15-17 are patentable under 35 U.S.C. §103(a) over JP06-234911 in view of JP11-080535 or EP1148097 optionally in further view of the Concise Encyclopedia of Polymer Science of Polymer Science and Engineering for at least the reasons independent claim 1 is patentable under 35 U.S.C. §103(a) over same.

NEW CLAIMS:

New claim 18 recites that the features of the present invention include that the resin composition according to claim 1 includes that the polystyrene-based resin (B) has an aromatic vinyl content of from 60 to 70% by weight. Nothing in the prior art teaches or suggests such. It is submitted that this new claim 18 distinguishes over the prior art. This new claim is supported, for example, by pate 11, lines 4-7, of the specification.

New claim 19 recites that the features of the present invention include that the resin composition according to claim 1 includes that the polystyrene-based resin (B) is a styrene-butadiene block copolymer. Nothing in the prior art teaches or suggests such. It is submitted that this new claim 19 distinguishes over the prior art. This new claim is supported, for example, by page 11, lines 1-4 of the specification.

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot, and further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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